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EXAMINER	
CHERRY, STEPHEN J	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/576,442	JACKSON ET AL.	
	Examin r	Art Unit	
	Stephen J. Cherry	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *10 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26 and 28-50* is/are pending in the application.

4a) Of the above claim(s) *1-20,36,37 and 39-43* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-26,28,35,38 and 44-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Claims 1-20, 36, 37, and 39-43 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 28-30 recite the limitation "the second relative measuring-device target position". There is insufficient antecedent basis for this limitation in the claim. It appears that this is a reference to a recitation that appeared in canceled claim 27.

Claim 44 recites the limitation "the first object and the second object". There is insufficient antecedent basis for this limitation in the claim. It appears that this is a reference to previously presented claim language that has been amended.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 21-22, 28-31, 34-35, 38, 44-47, 49-50 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,594,600 to Arnoul et al.

Claim 21 recites, as anticipated by Arnoul:

21. A wheel alignment method using a machine measuring system that has a first measuring device and a second measuring device, the method comprising the steps of:

mounting a first calibration target in a first fixed predetermined relationship to the first measuring device of the machine measuring system, wherein the first measuring device is configured to generate a positional parameter of a first wheel of a vehicle ('600, fig. 9, 59 and 52);

mounting a third measuring device in a second fixed predetermined relationship to the second measuring device of the machine measuring system, wherein the second measuring device is configured to generate a positional parameter of a second wheel of the vehicle, and the third measuring device is configured to measure a relative position between the third measuring device and the calibration target ('600, fig. 9, 51 and 53); and

using a computer ('600, col. 4, line 53),

repeatedly determining a relative measuring-device position value representing the position of the first measuring device relative to the second measuring device based

on a position of the first calibration target relative to the third measuring device ('600, col. 12, line 65); and,

calculating alignment parameters of the vehicle based on the relative measuring device position value, the first fixed predetermined relationship, the second fixed predetermined relationship, the positional parameter of the first wheel, and the positional parameter of the second wheel ('600, col. 13, line 9).

Claim 22 recites, as anticipated by Arnoul:

22. A method as recited in Claim 21, including selecting each measuring device from a group consisting of an image-capturing device configured to capture images of an object ('600, 51-53); a gravity gauge configured to detect movement of one or more other measuring devices with respect to another measuring device or with respect to a fix point; a string gauge configured to detect movement of one or more other measuring devices with respect to another measuring device or with respect to a fix point; a light source located near one measuring device to direct a light beam at a detector.

Claim 28 recites, as anticipated by Arnoul:

28. A method as recited in Claim 21, wherein the second relative measuring device target position value is computed based on a position of the first calibration target relative to a second calibration target ('600, col. 13, line 9).

Claim 31 recites, as anticipated by Arnoul:

31. A method as recited in Claim 21, further comprising the step of computing the relative measuring-device position value of the machine measuring system while the

first measuring device and the second measuring device of the machine measuring system are measuring targets of objects under measurement ('600, col. 12, line 65).

Claim 34 recites, as anticipated by Arnoul:

34. The method of claim 21, wherein each of the first measuring device, the second measuring device, and the third measuring device is an image-capturing device that performs measurements of objects by capturing images ('600, fig. 9, 51-53).

Claim 35 recites, as anticipated by Arnoul:

35. A method as recited in Claim 21, wherein any of the first measuring device, the second measuring device, and the third measuring device is an image capturing device that performs measurements of objects by capturing images ('600, fig. 9, 51-53).

Claim 38 recites, as anticipated by Arnoul:

38. A wheel alignment method using a first measuring device and a second measuring device, the method comprising the steps of:

mounting near the first measuring device a calibration device in which the position of the calibration device relative to the first device is predetermined; wherein the first measuring device is configured to measure a positional parameter of a first wheel of a vehicle ('600, fig. 9, 51-53);

mounting near the second measuring device a calibration target in which the position of the calibration target relative to the second device is predetermined; wherein the first measuring device is configured to measure a positional parameter of a second wheel of the vehicle ('600, 52 and 59);

repeatedly measuring the position of the calibration device relative to the calibration target ('600, col. 12, line 65, "continuously");

accessing computer-stored data related to the position of the calibration device relative to the first measuring device and the position of the calibration target relative to the second measuring device ('600, col. 13, line 2);

using a computer, repeatedly determining the position of the first measuring device relative to the second measuring device based on: the position of the calibration device relative to the first measuring device; the position of the calibration target relative to the second measuring device; and the position of the calibration device relative to the calibration target ('600, col. 12, line 65); and

calculating an alignment status of the vehicle based on the position of the first measuring, device relative to the second measuring device, the positional parameter of the first vehicle wheel, and the positional parameter of the vehicle second wheel ('600, col. 13, line 8).

Claim 44 recites, as anticipated by Arnoul:

44. The method of claim 21, wherein the computer periodically determines the relative position between the first object and the second object ('600, col. 13, line 8, alignment of the wheels).

Claim 45 recites, as anticipated by Arnoul:

45. The method of claim 38, wherein the computer determines the position of the first device relative to the second device periodically ('600, col. 12, line 65, value "continuously" known).

Claim 46 recites, as anticipated by Arnoul:

46. A wheel alignment method using a machine measuring system that has a first measuring device and a second measuring device for measuring positional parameters ('600, 51-52), wherein a first calibration device is in a first known positional relationship relative to the first measuring device, and a second calibration device is in a second known positional relationship relative to the second measuring device ('600, col. 13, line 2), the first calibration device and the second calibration device are used to measure a relative position of the first calibration device relative to the second calibration device ('600, col. 12, line 65), the method comprising the machine-implemented steps of:

receiving a signal generated by the first measuring device representing positional parameters of a first wheel of a vehicle (output of camera 52 received by computer described at col. 4, line 53);

receiving a signal generated by the second measuring device representing positional parameters of a second wheel of the vehicle (output of camera 51 received by computer described at col. 4, line 53);

repeatedly receiving a signal representing a relative position between the first calibration device and the second calibration device, wherein the relative position between the first calibration device and the second calibration device is measured by the first calibration device and the second calibration device ('600, col. 12, line 65);

accessing data representing the first known positional relationship and the second known positional relationship ('600, col. 13, line 2-14);

repeatedly calculating a relative position between the first measuring device and the second m measuring device based on the signal representing the relative position between the first calibration device and the second calibration device, the first known positional relationship and the second known positional relationship ('600, col. 13, line 2-14); and

determining alignment parameters of the vehicle based on the relative position between the first measuring device and the second measuring device, the positional parameter of the first wheel, and the positional parameter of the second measuring device ('600, col. 13, line 8-14).

Claim 47 recites, as anticipated by Arnoul:

47. A wheel alignment method as recited in claim 46, wherein the first measuring device, the second measuring device, the first calibration device or the second calibration device are selected from a group consisting of: an image-capturing device ('600, 51-53), a gravity gauge configured to detect movement of an object, a string gauge configured to detect movement of an object, and a light source configured to direct a light beam at a detector.

Claim 49 recites, as anticipated by Arnoul:

49. A wheel alignment method as recited in claim 46, wherein each of the first measuring device, the second measuring device, and the first calibration device is an image-capturing device that performs measurements of objects by capturing images ('600, 51-53).

Claim 50 recites, as anticipated by Arnoul:

50. A wheel alignment method using a machine measuring system that has a first measuring device and a second measuring device ('600, 51-52) for measuring positional parameters, wherein a first calibration device is in a first known positional relationship relative to the first measuring device, and a second calibration device is in a second known positional relationship relative to the second measuring device, the first calibration device and the second calibration device are used to measure a relative position of the first calibration device relative to the second calibration device ('600, col. 12, line 65), the method comprising the machine implemented steps of:

receiving a signal generated by the first measuring device representing a positional parameter of a first wheel of a vehicle (output of camera 52 received by computer described at col. 4, line 53);

receiving a signal generated by the second measuring device representing a positional parameter of a second wheel of the vehicle (output of camera 51 received by computer described at col. 4, line 53);

periodically receiving a signal representing a relative position between the first calibration device and the second calibration device, wherein the relative position between the first calibration device and the second calibration device is measured by the first calibration device and the second calibration device ('600, col. 12, line 65);

accessing data representing the first known positional relationship and the second known positional relationship ('600, col. 13, line 2-14);

repeatedly calculating a relative position between the first measuring device and the second measuring device based on the signal representing the relative position

between the first calibration device and the second calibration device, the first known positional relationship and the second known positional relationship ('600, col. 13, line 2-14); and

determining an alignment status of the vehicle based on the signal representing a relative position between the first measuring device and the first wheel, and the positional parameter of the first wheel, and the positional parameter of the second wheel ('600, col. 13, line 8).

Claims 21, 23-26, 32-33, 46 and 48 rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,531,030 to Dale.

Claim 21 recites, as anticipated by Dale:

21. A wheel alignment method using a machine measuring system that has a first measuring device and a second measuring device, the method comprising the steps of:

mounting a first calibration target ('030, 40 and 48) in a first fixed predetermined relationship to the first measuring device of the machine measuring system, wherein the first measuring device is configured to generate a positional parameter of a first wheel of a vehicle ('030, 12);

mounting a third measuring device ('030, 24 and 42) in a second fixed predetermined relationship to the second measuring device of the machine measuring system ('030, 10), wherein the second measuring device is configured to generate a positional parameter of a second wheel of the vehicle, and the third measuring device is

configured to measure a relative position between the third measuring device and the calibration target ('030, fig. 1); and

using a computer ('030, 38),

repeatedly determining a relative measuring-device position value representing the position of the first measuring device relative to the second measuring device based on a position of the first calibration target relative to the third measuring device ('030, col. 4, line 7); and,

calculating alignment parameters of the vehicle based on the relative measuring device position value, the first fixed predetermined relationship, the second fixed predetermined relationship, the positional parameter of the first wheel, and the positional parameter of the second wheel ('030, col. 4, line 24).

Claim 23 recites, as anticipated by Arnoul:

23. A method as recited in Claim 21, including storing a value that represents the position of the first calibration target relative to the third measuring device as a calibration value; wherein

the third measuring device periodically measures a new value that represents a new position of the first calibration target relative to the third measuring device ('030, col. 4, line 7); and

if the calibration value differs from the new value beyond an acceptable amount, then raising an alert alarm ('030, col. 4, line 20).

Claim 24 recites, as anticipated by Arnoul:

24. A method as recited in Claim 23, including applying the difference

in the calibration value and the new value to update the relative measuring-device position value ('030, col. 4, line 7).

Claim 25 recites, as anticipated by Arnoul:

25. A method as recited in Claim 23 including, upon recognizing that the calibration value differs from the new value beyond an acceptable amount, recalculating the relative measuring-device position value ('030, col. 4, line 7.

Claim 26 recites, as anticipated by Arnoul:

26. A method as recited in Claim 21, including:

storing a value that represents the position of the first calibration target relative to the third measuring device as a calibration value ('030, col. 4, line 25);

periodically measuring a new value that represents the position of the first calibration target relative to the third measuring device ('030, col. 4, line 7); and

if the calibration value differs from the new value beyond an acceptable amount, then raising an alert alarm ('030, col. 4, line 20).

Claim 32 recites, as anticipated by Arnoul:

32. A method as recited in Claim 21, further comprising the steps of:

computing a modified relative measuring-device position value of the machine measuring system while the first measuring device and the second measuring device of the machine measuring system are measuring targets of objects under measurement, and modifying measurements produced by measuring the targets of objects under measurement based on the modified relative measuring-device position value of the

machine measuring system ('030, col. 4, line 1-32, the modified positions are the automatically corrected values described).

Claim 33 recites, as anticipated by Arnoul:

33. A method as recited in Claim 32, wherein the step of modifying measurements produced by measuring the targets of objects under measurement based on the modified relative measuring-device position value of the machine measuring system is performed only when the modified relative measuring-device position value differs from the relative measuring-device position value by more than a predetermined value ('030, col. 3, line 63 to col. 4, line 21).

Claim 46 recites, as anticipated by Arnoul:

46. A wheel alignment method using a machine measuring system that has a first measuring device ('030, 12) and a second measuring device ('030, 10) for measuring positional parameters, wherein a first calibration device is in a first known positional relationship relative to the first measuring device, and a second calibration device is in a second known positional relationship relative to the second measuring device ('030, fig. 1, 24, 42, and 40, 48)), the first calibration device and the second calibration device are used to measure a relative position of the first calibration device relative to the second calibration device, the method comprising the machine-implemented steps of:

receiving a signal generated by the first measuring device representing positional parameters of a first wheel of a vehicle ('030, col. 2, line 45);

receiving a signal generated by the second measuring device representing positional parameters of a second wheel of the vehicle ('030, col. 2, line 45);

repeatedly receiving a signal representing a relative position between the first calibration device and the second calibration device, wherein the relative position between the first calibration device and the second calibration device is measured by the first calibration device and the second calibration device ('030, col. 3, line 27, and col. 3, line 45 to col. 4, line 33));

accessing data representing the first known positional relationship and the second known positional relationship ('030, col. 4, line 16);

repeatedly calculating a relative position between the first measuring device and the second m measuring device based on the signal representing the relative position between the first calibration device and the second calibration device, the first known positional relationship and the second known positional relationship ('030, col. 4, line 25); and

determining alignment parameters of the vehicle based on the relative position between the first measuring device and the second measuring device, the positional parameter of the first wheel, and the positional parameter of the second measuring device ('030, col. 3, line 27).

Claim 48 recites, as anticipated by Arnoul:

48. A wheel alignment method as recited in claim 46, further including the steps of:

storing a value that represents the relative position between the first calibration device and the second calibration, device as a calibration value;

periodically receiving a signal representing a new value that represents the relative position between the first calibration device and the second calibration device; and

raising an alert alarm in response to the calibration value differing from the new value beyond an acceptable amount ('030, col. 3, line 45 to col. 33, line 33, "prompt" to service technician).

Response to Arguments

Applicant's arguments with respect to claims 21-26, 28-35, 38, 44-45, 47, and 49-50 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 11-10-03 regarding claims 46 and 48 have been fully considered but they are not persuasive. Applicant states that several features are not disclosed by Dale, however, as described above, these features are taught by the reference. Particularly, Dale teaches accessing "known" angles or zero (col. 3, line 63, and other angles (col. 4, lines 15-20).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Cherry whose telephone number is (703) 305-0425. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (703) 308-3126. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0719.

SJC

Patent Examiner
Technology Center 2800